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PLANT IMMIGRANTS.

No. 175. NOVEMBER, 1920.

GENERA REPRESENTED IN THIS NUMBER.

	Page		Page
Amomum	1611	Momordica	1613
Amygdalus	1616	Olneya	1613
Anigozanthos	1611	Pachira	1614
Callitris	1611	Passiflora	1614
Citrus	1616	Persea	1615
Crotalaria	1611	Phoenix	1614
Digitaria	1612	Rubus	1614
Ipomoea	1613	Solanum	1615
Mezoneurum	1613		

Plates:

273. The sapote tree, as it grows in Cuba (*Achradelpha mammosa*).

274. The sapote or mamey colorado (*Achradelpha mammosa*).

Foreign Seed and Plant Introduction.

EXPLANATORY NOTE.

This multigraphed circular is largely made up from notes received from agricultural explorers, foreign correspondents, cooperators, and others, relative to the more important plants which have recently been received by the Office of Foreign Seed and Plant Introduction of the Department of Agriculture; in it are also contained accounts of the behavior in America of plants previously introduced. Descriptions appearing here are revised and published later in the Inventory of Seeds and Plants Imported.

Applications from experimenters for plants or seeds described in these pages may be made to this Office at any time. As they are received the requests are placed on file and when the material is ready for the use of experimenters it is sent to those who seem best situated and best prepared to care for it. The plants or seeds here described (except such as are distributed direct or are turned over to specialists in the Department who are working on investigational problems) are propagated at our Plant Introduction Field Stations; and when ready to be distributed are listed in our annual check lists, copies of which are sent to experimenters in the late fall. It is not necessary, however, to await the receipt of these lists should one desire to apply for plants which are described herein.

One of the main objects of the Office of Foreign Seed and Plant Introduction is to secure material for plant breeders and experimenters. Every effort will be made to fill specific requests for experimental quantities of new or rare foreign seeds or plants.

David Fairchild.
Agricultural Explorer in Charge

Office of Foreign Seed and Plant Introduction,
Bureau of Plant Industry,
U. S. Department of Agriculture.

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Amomum sp. (Zingiberaceae), 51628. From Africa. Seeds collected by Dr. H. L. Shantz, agricultural explorer. "(No. 1003. Near Meru, Kenia Province, Kenia.) A plant which branches like an Alpinia and possesses beautiful foliage. The deep reddish-purple fruit is partly hidden by the chocolate-colored bracts, and is borne in clusters. The fruit which is quite peppery, is eaten by the natives." (Shantz.)

Anigozanthos manglesii (Amaryllidaceae), 51344. From Perth, Western Australia. Seeds presented by Mr. H. C. Trethowan, Under Secretary for Agriculture. An amaryllidaceous plant native to the Swan River country of southwest Australia. It bears scorpoid racemes on stout, woolly, bright red stems. The lustrous green, tomentose spathes are square at the end, recurved, and bear the stamens on the curve. (Adapted from the Pacific Garden, vol. 7, p. 11.)

Callitris drummondii (Pinaceae), 51283. From Blackwood, South Australia. Seeds presented by Col. E. Ashby. "This dwarf, ornamental plant is undoubtedly a real acquisition as a globose, bright green, cypresslike tree. Seeds of this species were collected on Kangaroo Island in 1909, and were grown in the wild part of my place, 'Wittunga,' where they have done well amongst the other scrub, absolutely without water or any attention — and this last season we had about the worst season we have ever known; the later spring rains were entirely absent and the winter rains did not start until June." (Ashby.)

Crotalaria usaramoensis (Fabaceae), 51207. From Buitenzorg, Java. Presented by Dr. P. J. S. Cramer, chief, Plant Breeding Station. A tall herb native to Tanganyika Territory, and allied to *C. lanceolata* from which it differs in its broader and shorter leaflets which are glabrous above and strigose pubescent below. The racemes are 15 to 25 cm. long. In Buitenzorg the grayish fiber is not so smooth silky as that of *Hibiscus cannabinus*, but that does not necessarily mean that it is not suitable for the spinning of yarn. The same is the case with sunnhemp (*Crotalaria juncea*) which in British India is more highly esteemed than Deccan hemp (*Hibiscus cannabinus*). A great drawback is that, up to the present, the total amount of fiber obtained differs very materially in strength and ordinarily is not very strong. How this will be influenced by dif-

ferent climatic and cultural conditions and soil, can be determined only by making tests elsewhere, - which is strongly recommended.

The leaves are used as a green manure and as cattle feed. An analysis of the leaves made by Dr. A. W. K. de Jong, of the Agricultural Chemical Laboratory, is as follows:

	Fresh leaves	Dry leaves
Albumen	5.3 per cent	26.7 per cent
(nitrogen	0.87 per cent	4.27 per cent)
Fat	1.4 per cent	7.0 per cent
Starch	1.9 per cent	9.6 per cent
Crude fiber	4.0 per cent	20.1 per cent
Crude ash	0.9 per cent	4.5 per cent
Water	80.1 per cent	
Nutritive value	34.4 per cent	

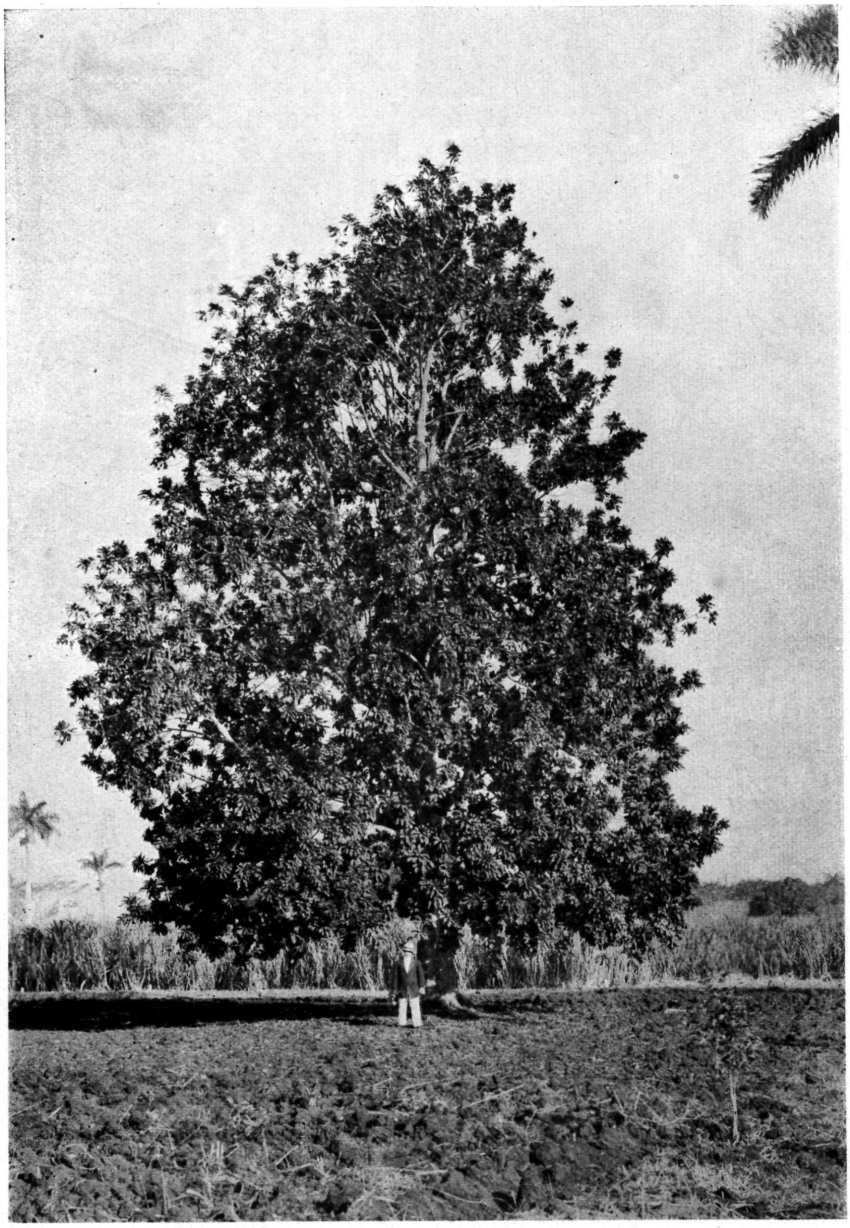
The roots and stems will perhaps be suitable for the manufacture of paper, where the transportation facilities are favorable. The wood which remains after the removal of the fiber is very thin and smooth, but it burns well and without smoke and is much in demand by the inland women as firewood. It has no commercial value, but it is very acceptable in regions where firewood is scarce. By cultivation one easily obtains 50 to 100 piculs (6,666 to 13,333 lbs.) of dry sticks without any trouble.

The seed from an old planting is very plentiful; from a planting harvested solely for fiber there is perhaps enough seed for a new planting. Whether from the seed a profitable by-product can be made has not yet been demonstrated. Probably it is a good chicken feed. An analysis of the seed follows:

Water	12.9 per cent
Oil	2.98 per cent
Albumen	23.25 per cent
(nitrogen	3.72 per cent)

In the neighborhood of a Crotalaria plantation bees multiply rapidly and produce very good honey. (Adapted from Journal of the Linnean Society, vol. 42, p. 346; and Mededeelingen uit den Cultuurtuin No. 12, 1918.)

Digitaria iburua. (Poaceae), 51257. **Grass**. From Kaduna, Nigeria. Seeds presented by Mr. P. H. Lamb, director of agriculture, Northern Provinces. "'Iburu' is grown by the natives of northern Nigeria as a cereal. The grains separate fairly readily from the husks when pressure is applied, and the seeds are pure white.



THE SAPOTE TREE, AS IT GROWS IN CUBA.

(*Achradelpha mammosa* (L.) O. F. Cook. See S. P. I. No. 47516.)

On the rich soils of Cuba and Central America the sapote or mamey colorado grows to immense size. It produces its large brown fruits in abundance, and requires no cultural attention. For a species which has never had the benefit of improvement by selection and vegetative propagation, its fruits have an unusually large amount of flesh and are of good quality. Among the Indians of Central America the sapote is a favorite. (Photographed by Wilson Popenoe, Santiago de las Vegas, Cuba, February 23, 1916; P16675FS.)

THE SAPOTE OR MAMEY COLORADO.

(*Achradelpha mammosa* (L.) O. F. Cook. See S. P. I. No. 47516.)

In southern Mexico and Central America the sapote grows wild in the forests, and the fruits are gathered by the Indians. They are very sweet and somewhat squashlike in flavor, but they are universally liked by residents of the Tropics. They can be made into an excellent sherbet and a rich jam. It is recorded that the army of Cortez, when making the historic march from Mexico to Honduras, was saved from starvation by these fruits. (Photographed by Wilson Popenoe, Havana, Cuba, July 30, 1914; P16114FS, reduced.)

They weigh in their husks on the average 0.7 mg., so that over 40,000 go to an ounce. As one raceme may contain as many as 200 spikelets, a single head may yield between 1,000 and 2,000 grains." (Kew Bulletin of Miscellaneous Information, No. 8, 1915, p. 381.)

Ipomoea sp. (Convolvulaceae), 51639. **Morning glory.** From Africa. Seeds collected by Dr. H. L. Shantz, agricultural explorer. "(No. 999. Uaso Nyiro River, Kenia Province, Kenia.) A large, leafless (at flowering time) Ipomoea with large purple flowers. It makes a very attractive desert shrub." (Shantz.)

Mezoneurum scortechinii (Caesalpiniaceae), 51253. From Burringbar, New South Wales. Seeds presented by Mr. B. Harrison. "A vine or trailing shrub called 'barisber,' which would make a first-class hedge if trained on a wire fence. It is a strong, thick, prickly vine with splendid fernlike foliage and large racemes of bright yellow flowers." (Harrison.)

Momordica sp. (Cucurbitaceae), 51640. From Africa. "(No. 997. Meru, Kenia Province, Kenia). A cucumberlike fruit with ribbed outer surface; reddish yellow inside with very red seeds surrounded by edible pulp." (Shantz.)

Olneya tesota (Fabaceae), 51254. From Coachella, Calif. Seeds presented by Mr. Wm. R. Faries. A handsome flowering tree, with a dark, heavy, hard wood like ebony, and with nutritious foliage and flowers that are eaten with avidity by animals. The tree bears heavy crops of pods not unlike those of garden beans and each pod may have several seeds of the size, appearance, and texture of small peanuts and having the same agreeable flavor when roasted. The fleshy young pods probably could be cooked and eaten like green beans, since they do not taste bitter, even in the raw state. The largest pods have 9 fully developed and 2 abortive beans.

The Olneya is the largest as well as the most attractive native tree in the driest southwestern deserts, away from the stream beds and with full exposure to heat and drought. The large taproot remains entirely unbranched for 7 or 8 feet. Such a habit of growth would indicate little or no interference with surface crops and would suggest the value of the tree for planting in or near cultivated lands

where it may serve very well for hedges or windbreaks, as well as for holding terraces, or as barriers against erosion. Even on desert lands that are too broken for irrigation it might prove worth while to plant belts of Olneya across the washes, to hold back and spread the flood waters. More moisture would be absorbed by the soil, and more vegetation could grow, in addition to the forage that the Olneya itself would afford. (Adapted from Journal of Heredity, vol. 10, p. 321.)

Pachira fastuosa (Bombacaceae), 51204. From Santiago de las Vegas, Cuba. Presented by Sr. Gonzalo M. Fortun, director, Agricultural Experiment Station. Seedlings of a handsome tropical tree native to Mexico. The flowers in their size and color are both exceptional and attractive, as they measure about a foot in diameter; the strap-shaped petals are white, and the large brushlike cluster of stamens crimson and yellow. The foliage is not unlike that of the horsechestnut, but it is more leathery in texture. (Adapted from Gardeners' Chronicle, vol. 54, p. 325.)

Passiflora mollisima (Passifloraceae), 51205. From Guayaquil, Ecuador. Seeds presented by Mr. James Birch Rorer, Associacion de Agricultores del Ecuador. "Seeds of a fruit which is grown in the valleys of the Sierra and which is commonly called 'tasco.' The flavor of the fruit is somewhat like that of currants. A very delicious sherbet or ice cream can be made from it, and also a fine drink or 'refresco.'" (Rorer.)

Phoenix reclinata (Phoenicaceae), 51451. **Palm.** From East African Protectorate, Africa. Seeds collected by Dr. H. L. Shantz, agricultural explorer. "(No. 1002. Near Meru, Kenia Province, Kenia.) A most attractive palm, growing in canyons near Meru."

A hardy ornamental palm, not very tall but often reclining. The sweet coating of the drupaceous fruit is edible. This palm is distributed throughout tropical Africa. (Adapted from Mueller, Select Extra-Tropical Plants, p. 259.)

Rubus sp. (Rosaceae), 51354. From Bogota, Colombia. Collected by Mr. Wilson Popenoe, agricultural explorer. "No. 438a. Seeds of a wild blackberry, which is excellent though the fruit is rather small. It is found on the mountain slopes at altitudes of

5,000 to 6,000 feet, above Esperanza, on the railway from Bogota to Giradot. The canes reach a length of about 10 feet, and are more or less erect in habit. The flowers are small and white. The berries are produced in large clusters; individually they are one-half to three-quarters of an inch long, with the drupelets which compose them small, deep purple, and set closely together. The flavor of the ripe berry is sweet and pleasant." (Popenoe.)

Solanum sp. (Solanaceae), 51265. From Coban, Alta Verapaz, Guatemala. Seeds presented by Mr. Harry Johnson. "No. 586. 'Macui', in Kekchi dialect. Similar in habit and appearance to *S. douglasii*, of California, but more shrubby. The tender young tips, picked and sorted, the tougher stems being discarded, are widely used throughout this region as 'greens.' During the hot summer season vegetables become scarce, but the macui is always to be had. The macui greens have an excellent flavor, are said to have medicinal properties, and seem to have more 'body' than others. They are sometimes made into an omelet." (Johnson.)

Notes from Correspondents.

September 28, 1920, Mr. C. C. Shooter, Earleton, Fla., writes:

"In 1900, the Division of Pomology sent four young Mexican avocado seedlings (*Persea americana*) to Baron H. V. Luttichau, two of which he gave me. One of his died, the other is a large tree now, but has been considerably hurt by heavy wind. Some years later one of my trees died when transplanted. The other is now a large tree 35 feet high. The Von Luttichau tree and mine are the only trees in this part of the country. I regard this avocado as the greatest addition to our fruits that has ever been made, superior even to the peach or pear. It is more hardy, less likely to have the bloom cut by early frosts, and is freer from insects and disease than any other tree. Its economic value is immense, when it is considered that it can be used as a vegetable and pie fruit, especially where it is plentiful and cheap. It ships well, better than peaches; I have sent it every week to Binghamton, N. Y.; it arrived in perfect condition and kept for a week or ten days in the refrigerator. It may interest you to have a few recipes for cooking which we have tried out and found excellent.

Avocado as a hors d'oeouvres.

"Cut in rather thick slices, warm in frying pan, serve hot on squares of toast.

Avocado as a vegetable.

"Boil in salt water for five minutes; make a heavy white sauce and pour over the well-drained avocado.

Avocado for pies.

"Mash the avocado to a fine pulp. To each cup of pulp add one well-beaten egg, three-fourths cup milk, large spoonful sugar, pinch of salt. Place in pie crust and bake."

In a letter dated September 7, 1920, Mr. W. H. Bach, of Burbank, Calif., writes;

"We won 3 blue ribbons and a special prize at the Burbank Harvest Festival for display of fruits from experimental plants received from your Office, and we have been solicited for an extensive display of fruits and plants next season.

"Two trees of 'Early peach' (*Amygdalus persica,* S.P.I. No. 33219) planted February, 1918, bore a few fruits in June, 1919, and this season the trees are six feet high, broad in proportion, and bore about 300 fruits. I picked the first fruit June 4, and the ripe fruit was all gone before the 'Elbertas' within 20 feet of them were through blossoming. The fruits of the 'Early peach' have a greenish tinge to the flesh, a pretty red cheek, and a fine flavor. I am preparing to put them on the market and will plant about an acre of them instead of the lemons now in that place."

Mr. D. W. Coolidge, Pasadena, California, writes November 26, 1920:

"We are getting a pretty good start with the *Citrus limonia* (S. P. I. No. 23028). We now have over 1,000 plants ready to go into 6-inch pots, and over 2,000 in 2-inch pots ready to line out in the spring. I saw yesterday one of our plants grown from a cutting, probably 2 to 3 feet across and 2 feet high, that had on it more than 4 dozen lemons, and the owner assured me that he had picked off more than he had left on. I am entirely convinced that this is a superb novelty both for economic and ornamental purposes."

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BUREAU OF PLANT INDUSTRY
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WASHINGTON, D. C.

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